

**Technical Review and the Evaluation of the  
Application for Air Quality Significant Permit  
Revision Number 47339**

**I. INTRODUCTION**

PFFJ, LLC., permitted their feed mill operations through Operating Permit # 36632. The concentrated animal feeding operations (CAFO) and other onsite equipment were not included in operating permit # 36632. This Class II Significant Revision is being issued to PFFJ, LLC., the Permittee, for the operation of CAFO and for the addition of the following equipment.

3 diesel-fired generators of capacities 448 horsepower (hp), 224 hp and 224 hp.

**Company Information**

Facility Name: PFFJ, LLC. – Snowflake Concentrated Animal Feeding Operations (CAFO)

Mailing Address 59 W. Center Street  
Snowflake, AZ 85937

Facility Address 11 miles North of Snowflake, AZ  
Off Hwy 77  
Snowflake, AZ 85937  
Navajo County

**II. FACILITY DESCRIPTION**

PFFJ, LLC is a CAFO with an animal feed mill plant. The facility manufactures animal feed using corn, soy meal, and various additives as raw materials. The main ingredients, however, are corn and soybean meal. The company permitted their feed mill operations through operating permit # 36632. All operations and onsite equipment at the source were not permitted under Permit # 36632. The CAFO, three diesel-fired generators, and propane heaters are being permitted through this significant revision to operating permit # 36632.

**III. LIMITATIONS ON POTENTIAL TO EMIT (PTE)**

The facility has the PTE of more than 100 tons per year of VOC and NO<sub>x</sub>, which would make the facility a major source by definition. However, the Permittee has taken limitations to stay below the major source thresholds.

The uncontrolled emissions from the equipment permitted through this significant revision in tons per year are given below.

Pollutant	Emissions*
CO	43 tpy
NO <sub>x</sub>	151 tpy
SO <sub>x</sub>	11 tpy
VOCs	156 tpy
PM	1930 tpy
PM <sub>10</sub>	38 tpy
HAPs	0.10 tpy
H <sub>2</sub> S	684 tpy

\* The emissions from the animals are included in the uncontrolled numbers listed above. The emissions from the animals are considered fugitive. The emission factors listed in a Preliminary draft report titled "Emissions from Animal Feeding Operations" issued by the Emission Standards Division, Office of Air Quality Planning and Standards, US EPA, August 2001, were used as a reference to calculate emissions. There is significant concern in the Animal Feeding Operations Industry that the emission factors used in these calculations are not accurate.

The Permittee is accepting hourly limits for two diesel-fired generators and annual cap on fuel consumption for the heaters. The emissions associated non-fugitive sources, considering restrictions associated with equipment permitted through this significant revision in tons per year are given below:

Pollutant	Emissions
CO	22 tpy
NOx	90 tpy
SOx	6 tpy
VOCs	7 tpy
PM	6 tpy
PM <sub>10</sub>	6 tpy
HAPs	0.07 tpy

The permit limited emissions summary for non-fugitive sources at the entire facility in tons per year are given below:

Pollutant	Emissions
CO	22 tpy
NOx	90 tpy
SOx	6 tpy
VOCs	7 tpy
PM	123 tpy
PM <sub>10</sub>	60 tpy
HAPs	0.07 tpy

#### **IV. COMPLIANCE HISTORY**

There are currently no open enforcement actions against the facility.

#### **V. APPLICABLE REGULATIONS**

The table below displays the applicable requirements for each piece of equipment under this significant permit revision.

### Applicable Regulations

Unit	Date of Manufacture	Control Device	Rule	Verification
Internal Combustion Engines	1992, 1992	N/A	A.A.C. R18-2-719	This standard is applicable to all internal combustion engines.
Internal Combustion Engine	2006	N/A	40 Code of Federal Regulations 60, subpart III	This standard is applicable to internal combustion engines (ICEs) that commence construction after July 11, 2005, and where the ICE is manufactured after April 1, 2006.
Internal Combustion Engines	1992, 1992, 2006	N/A	40 CFR 63 Subpart ZZZZ	This standard is applicable to all internal combustion engines that are area source of HAPs.
CAFO	N/A	N/A	A.A.C. R18-2-730	The CAFO is an unclassified source and is therefore subject to Standards of Performance for Unclassified Sources A.A.C. R18-2-730.
Heaters	N/A	N/A	A.A.C. R18-2-730	The heaters are an unclassified source and are therefore subject to Standards of Performance for Unclassified Sources A.A.C. R18-2-730.
Storage Tanks	N/A	Submerged filling	A.A.C. R18-2-710, 40 CFR 63, Subpart CCCCCC	Standards of Performance for Existing Storage Vessels for Petroleum Liquids; NESHAP for Gasoline Dispensing Facilities

## VI. NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAPS) REQUIREMENTS

- a. The three diesel-fired engines are affected facilities under the 40 CFR 63 Subpart ZZZZ, NESHAPS for Stationary Reciprocating Internal Combustion Engines (RICE). According to 40 CFR 63.6590.b.3, an existing compression ignition (CI) stationary RICE located at an area source does not have to meet the requirements of this Subpart.
- b. The gasoline storage tanks are subject to the NESHAP requirements under 40 CFR 63 Subpart CCCCCC. All requirements under this Subpart for storage tanks with monthly throughput less than 10,000 gallons have been included in the permit.

## VII. MONITORING, REPORTING, AND RECORDKEEPING REQUIREMENTS

### A. Internal Combustion Engines – New Source Performance Standard (NSPS) Requirements

1. Recordkeeping Requirements
  - a. The Permittee must keep records of maintenance conducted on the engine.
  - b. The Permittee must keep documentation that engine meets emission standards.

2. Reporting Requirements

The Permittee must submit notification of the date construction is commenced postmarked no later than 30 days after such date.

**B. Internal Combustion Engines – Non-NSPS Requirements**

1. Monitoring Requirements

The Permittee is required to perform monthly surveys of visual emissions from the internal combustion engines stacks to be performed by a certified EPA Reference Method 9 observer. If the opacity of the emissions observed appears to exceed the standard, the observer is required to conduct a certified EPA Reference Method 9 observation.

2. Recordkeeping Requirements

- a. The Permittee must record and maintain a log of the daily hours of operation and calculate a rolling twelve-month total of hours of operation of the internal combustion engines at the end of each month.
- b. The Permittee must record the emission point being observed, date, time and the results of all visible emission surveys or Method 9 observations made, as well as the name of the observer who conducted the test. In the event of opacity going beyond the limit, the Permittee will keep a record of the corrective action taken to bring the opacity below the standard.
- c. The Permittee must keep records of fuel supplier certifications. The certification shall contain information regarding the name of fuel supplier, the heating value of the fuel, and the sulfur content in the fuel. These records shall be made available to ADEQ upon request.

**C. CAFO**

1. Monitoring Requirements

The Permittee is required to conduct monthly surveys of visual emissions to be performed by a certified Method 9 observer. If the opacity of the emissions observed appears to exceed the standard, the observer is required to conduct a certified EPA Reference Method 9 observation.

2. Recordkeeping Requirements

The Permittee is required to record the emission point being observed, date, time and the results of all visible emission surveys or Method 9 observation made monthly, as well as the name of the observer who conducted the test. In the event of opacity going beyond the limit, the Permittee will keep a record of the corrective action taken to bring the opacity below the standard.

## **D. Heaters**

### **1. Monitoring Requirements**

The permit requires monthly surveys of visual emissions from the heater stacks to be performed by a certified Method 9 observer. If the opacity of the emissions observed appears to exceed the standard, the observer is required to conduct a certified EPA Reference Method 9 observation.

### **2. Recordkeeping Requirements**

- a. The Permittee is required to record the emission point being observed, date, time and the results of all visible emission surveys or Method 9 observation made monthly, as well as the name of the observer who conducted the test. In the event of opacity going beyond the limit, the Permittee will keep a record of the corrective action taken to bring the opacity below the standard.
- b. The Permittee must keep records of fuel supplier certifications. The certification shall contain information regarding the name of fuel supplier and the heating value of the fuel. These records shall be made available to ADEQ upon request.
- c. On a monthly basis, the Permittee must calculate and record the twelve month rolling total of propane used at the facility.
- d. Upon replacing any heater with a replacement heater that has the same or lower Btu and CFM ratings, the Permittee must keep records of the capacity and serial number of the heater to be replaced, capacity and serial number of the replacement heater, date and time when the replacement was completed, the date the log was made and the first and last name of the person making the log. These records shall be made available to ADEQ upon request.

## **E. Gasoline Dispensing Facilities**

### **Recordkeeping Requirements**

The Permittee is required to maintain a log of the monthly throughput of the gasoline storage tank.

## **F. Gasoline Storage Tank**

### **Recordkeeping Requirements**

1. The Permittee is required to record the typical Reid vapor pressure of gasoline stored, dates of storage, dates on which the storage vessel is empty.
2. The Permittee is required to record the average monthly temperature and true vapor pressure of gasoline at such temperature if the true vapor pressure is

greater than 470 mm Hg (9.1 psia) and the gasoline is stored in a storage vessel other than one equipped with a vapor recovery system or its equivalent.

## VIII. LEARNING SITES POLICY

In accordance with ADEQ's Environmental Permits and Approvals Near Learning Sites Policy, the Department conducted an evaluation to determine if any nearby learning sites would be adversely impacted by PFFJ, LLC.. Learning sites consist of all existing public schools, charter schools and private schools at the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

There are no learning sites within two miles of the facility. The Department has determined that the operation of the facility will not adversely affect learning sites.

## IX. IMPACTS TO AMBIENT AIR QUALITY

### A. Introduction

As part of PFFJ, LLC's Class II significant permit revision application, PFFJ has performed an air quality impact analysis (i.e. modeling analysis, AERMOD). The sources analyzed include PFFJ feed mill, generators and haul roads located at the CAFO.

The purpose of the modeling analysis is to determine whether air quality impacts from proposed criteria pollutant emissions will cause or contribute to a violation of any air quality standard, or worsen an existing air quality problem. Applicable standard include the National Ambient Air Quality Standards (NAAQS) and the H<sub>2</sub>S standard.

### B. Modeling Analysis Overview

#### NAAQS Analysis

The table below shows the AERMOD results of the NAAQS analysis for CO, NO<sub>2</sub>, SO<sub>2</sub>, PM<sub>10</sub>. All pollutants are within the standards.

#### Modeling Analysis Results

Pollutant	Background Concentration	AERMOD Results	Total	Standard
	(µg/m3)	(µg/m3)	(µg/m3)	(µg/m3)
NO <sub>2</sub> - Annual	2.48	50.75	53.23	100
CO - 1-hour	11,647	323.12	11,970	40,000
8-hour	7,721	177.19	7,898	10,000
PM <sub>10</sub> - 24-hour	45.33	72.75	118.09	150
Annual	15.6	23.96	39.56	50
SO <sub>2</sub> - 3-hour	18	70.63	88.63	1,300
24-hour	21	28.36	49.36	365
Annual	3	3.36	6.36	80

The table below shows the test results of the H<sub>2</sub>S ambient air concentrations in ppm measured at the facility. H<sub>2</sub>S emissions are within the permit limit.

Pollutant	Background Concentration	Test Results	Total	A.A.C. R18-2-730 Limit
	ppm	ppm	ppm	ppm
H <sub>2</sub> S	0.004	0.013	0.017	0.03

## X. TRIVIAL & INSIGNIFICANT ACTIVITIES

This table includes a listing of trivial and insignificant activities.

Tank #	Storage Tanks	Storage Volume (gallons)	Justification
100	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
101	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
102	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
103	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
104	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
105	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
106	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
107	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
108	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
109	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
110	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
111	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
112	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
113	Portable Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
31	Nursery Tank	6,000	Trivial activity, A.A.C. R18-2-101(119)(s)
32	Nursery Tank	6,000	Trivial activity, A.A.C. R18-2-101(119)(s)
33	Nursery Tank	6,000	Trivial activity, A.A.C. R18-2-101(119)(s)
34-36Lg	Nursery Tank	13,150	Trivial activity, A.A.C. R18-2-101(119)(s)
34-36Sm	Nursery Tank	10,000	Trivial activity, A.A.C. R18-2-101(119)(s)
51	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
52	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
53	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
54	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
55	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
56	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
57	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
58	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
59	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
60	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
61	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
62	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
63	Finisher Tank	250	Trivial activity, A.A.C. R18-2-101(119)(s)
11-13	Cholla Tank	18,000	Trivial activity, A.A.C. R18-2-101(119)(s)
14-16	Cholla Tank	10,000	Trivial activity, A.A.C. R18-2-101(119)(s)
SH	Supply House	250	Trivial activity, A.A.C. R18-2-101(119)(s)
HS	Maintenance Shop	1,000	Trivial activity, A.A.C. R18-2-101(119)(s)

<b>Tank #</b>	<b>Storage Tanks</b>	<b>Storage Volume (gallons)</b>	<b>Justification</b>
WH	Wash House	320	Trivial activity, A.A.C. R18-2-101(119)(s)
FM	Feed Mill	573	Trivial activity, A.A.C. R18-2-101(119)(s)
FM/House	Feed Mill / House	500	Trivial activity, A.A.C. R18-2-101(119)(s)
1	Midway	1,000	Trivial activity, A.A.C. R18-2-101(119)(s)
2	Midway	1,000	Trivial activity, A.A.C. R18-2-101(119)(s)
3	Midway	1,000	Trivial activity, A.A.C. R18-2-101(119)(s)
	Office Trailer	235	Trivial activity, A.A.C. R18-2-101(119)(s)
41	Wean to Finish	18,000	Trivial activity, A.A.C. R18-2-101(119)(s)
Feed Mill Diesel	Diesel Tank	1,000	Insignificant activity, A.A.C. R18-2-101(57)(c)
Maintenance Diesel	Diesel Tank	1,000	Insignificant activity, A.A.C. R18-2-101(57)(c)

## **X. LIST OF ABBREVIATIONS**

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
CAFO	Concentrated Animal Feeding Operation
CFR	Code of Federal Regulations
CO	Carbon Monoxide
EPA	Environmental Protection Agency
H <sub>2</sub> S	Hydrogen Sulfide
NAAQS	National Ambient Air Quality Standard
NO <sub>x</sub>	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter Nominally less than 10 Micrometers
PPM	Parts per Million
PTE	Potential-to-Emit
SO <sub>x</sub>	Sulfur Oxides
TPY	Tons per Year
VOC	Volatile Organic Compound